

**Contributed by:**

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**Region:**

CONUS East/Southeast

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**Date:**

18 November 2015

**Product(s):**

Nighttime Microphysics RGB

**Application Area:**

Aviation

**Feature:**

Low ceilings from fog and stratus

**Instrument(s):**

ABI, MODIS, VIIRS, AVHRR

**Works well with:**

11-3.9 $\mu$  difference

Visibility & ceiling observations

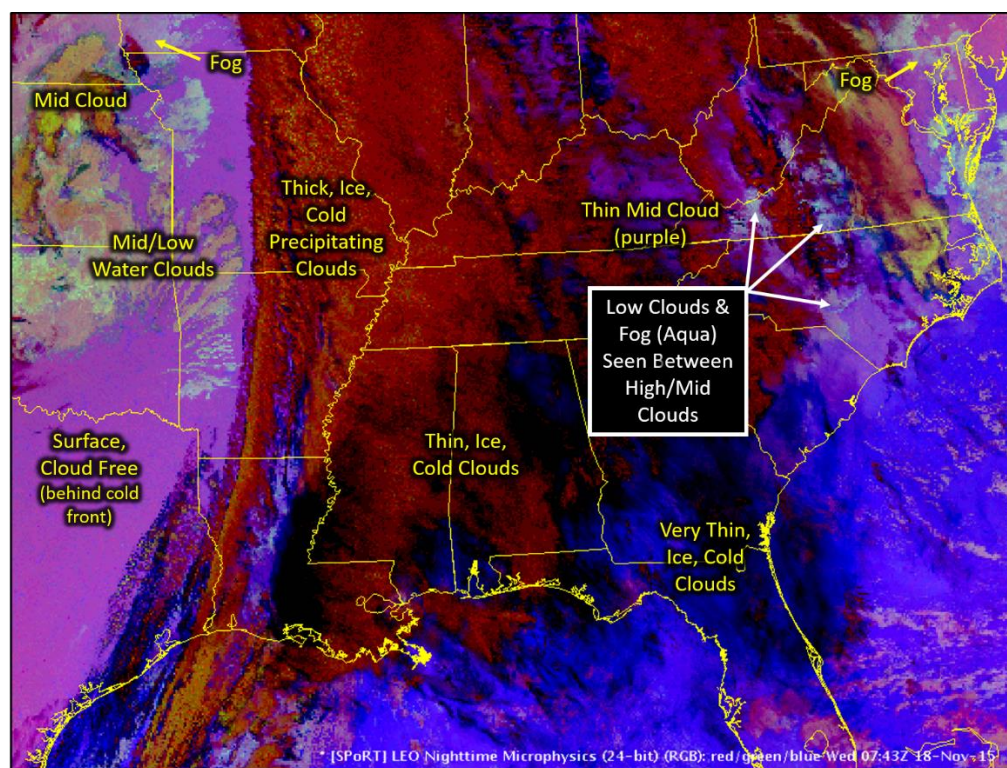
**Related Links:**

[SPoRT Quick Guide for NtMicro RGB](#)

[Aviation Forecasting: RGB Products](#)

**Event Description:** Deep moisture ahead of an advancing colder air mass was prevalent across portions of the Midwest, Tennessee Valleys, and into the Deep South. Fog and low clouds were located behind the cold front across portions of the central Plains and causing MFVR conditions. Moderate to heavy rainfall was just ahead of the cold front while a mix of clouds was occurring near the warm front to the east.

**Product Impact:** In the Virginia and North Carolina area, low clouds and fog are observed between breaks in high and mid-level clouds near the warm front (Fig. 1). Unlike standard longwave imagery, the Nighttime Microphysics (NtMicro RGB) allowed the forecaster to “see” these low cloud features by contrasting with the mid/high cloud colors. The low clouds appear in an aqua coloring while fog tends toward dull aqua to gray shades, and they alert the forecaster of possible ceiling hazards to aviation.



**Figure 1.** Nighttime Microphysics RGB from S-NPP/VIIRS. valid at 0743 UTC, 18 November 2015. Cloud features in yellow and analysis of low clouds between mid/high clouds annotated in text box.

**Interpretation:** The fog appears in gray to dull aqua shades. The warm fog will have more blue contributions than the low to mid clouds (bright aqua to tan). Most of the bright red clouds in the middle part of this scene are cold, thick clouds and represent areas where precipitation is occurring. Higher red contribution indicates thick cloud, while small blue and green contributions indicate cold temperatures and ice respectively. Note that the dark blue coloring near the Gulf coast states is actually a small amount of blue contribution to the RGB and there's very little red to green here. This dark blue is therefore thin, high ice clouds (i.e. cirrus).